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EXAMINER

SWERDLOW, DANIEL

ART UNIT	PAPER NUMBER
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2644

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Please find below and/or attached an Office communication concerning this application or proceeding.

Handwritten signature

# Office Action Summary

Application No.

10/007,452

Applicant(s)

FREYMAN ET AL

Examiner

Daniel Swerdlow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-69 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 14-27, 34, 35, 45-49, 51, 52, 57-66 and 69 is/are rejected.
- 7) ☒ Claim(s) 11-13, 28-33, 36-44, 50, 53-56, 67 and 68 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_. 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Objections*

1. Claims 28 and 68 are objected to because of the following informalities:
2. Claim 28 lacks a period at the end of the claim.
3. Claim 68 has two periods at the end of the claim.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 through 6, 10, 15 through 18, 34, 35, 57 through 62 and 66 are rejected under 35 U.S.C. 102(b) as being anticipated by Rosenbaum et al. (US Patent 5,323,461).
6. Claim 1 claims a programmable access point for interfacing a communications network with communications equipment located at user premises. Rosenbaum discloses a telephone line interface circuit (column 2, lines 5-13) that corresponds to the access point claimed. Claim 1 further claims the access point comprises a line driver. Rosenbaum discloses a driver circuit and switching circuit combination (Fig. 2, reference 10, 11) that corresponds to the line driver claimed. Claim 1 further claims at least one sensing unit sensing the line driver load on the line driver. Rosenbaum discloses a sensing circuit (Fig. 1, reference 12; column 3, lines 36-37) that corresponds to the sensing unit claimed and provides signals representing the loop current (i.e.,

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the line driver load) (column 3, lines 51-56). Claim 1 further claims a processing unit comparing the sensed line driver load with at least one operating load limit and generating a line driver drive level to the line driver in response to the comparison. Rosenbaum discloses a control circuit (Fig. 1, reference 15; column 3, lines 56-63) that corresponds to the processing unit claimed and monitors the loop current (i.e., compares the sensed line driver load with at least one operating load limit) (Fig. 5, reference 36; column 8, lines 41-64) and causes a desired voltage to be supplied (i.e., generates a line driver drive level) to the driver circuit that corresponds to the line driver claimed (column 8, lines 61-64). Therefore, Rosenbaum anticipates all elements of Claim 1.

7. Claim 2 claims the access point of Claim 1 wherein the line driver drives a user communications line. As stated above apropos of Claim 1, Rosenbaum anticipates all elements of that claim. In addition, Rosenbaum discloses supplying direct current on (i.e., driving) a two-wire telephone line that corresponds to the user communications line claimed (column 2, lines 5-13). Claim 2 further claims user communications equipment connected to the user communications line. Rosenbaum discloses a subscriber's telephone (column 8, lines 39-41) that corresponds to the user communications equipment claimed. Claim 2 further claims power being provided to the user communications equipment by the line driver over the user communications line. Rosenbaum discloses providing off-hook line current (i.e., power to user communication equipment) (column 5, lines 36-40). Claim 2 further claims the line driver adjusting power provided to the user communications equipment in response to the line driver drive level. Rosenbaum discloses limiting loop current (i.e., adjusting power provided to user equipment) by

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adaptively controlling driver circuit power (i.e., line driver drive level) (column 5, lines 36-45).

Therefore, Rosenbaum anticipates all elements of Claim 2.

8. Claim 3 claims the access point of Claim 2 with the processing unit decreasing the line driver drive level when the comparison indicates the sensed line driver load is less than a lower operating load limit and increasing the line driver drive level when the comparison indicates the sensed line driver load is greater than an upper operating load limit. As stated above apropos of Claim 2, Rosenbaum anticipates all elements of that claim. In addition, Rosenbaum discloses adjusting the driver circuit power (i.e., line driver drive level) to maintain an off-hook current under different loop resistance conditions by increasing power for long loops (i.e. load is greater) and decreasing power for short loops (i.e., load is less) (column 5, lines 29-47). Therefore, Rosenbaum anticipates all elements of Claim 3.

9. Claim 4 claims the access point of Claim 3 with the line driver providing a drive voltage controlled by the line driver drive level. As stated above apropos of Claim 3, Rosenbaum anticipates all elements of that claim. In addition, Rosenbaum discloses the switching circuit that corresponds to the line driver claimed supplying voltage signals (i.e., a drive voltage) (column 2, lines 23-30). Therefore, Rosenbaum anticipates all elements of Claim 4.

10. Claim 5 claims the access point of Claim 4 wherein the sensing unit comprises a current sensor sensing a drive current on the user communications line, the drive voltage being adjusted in response to the sensed drive current. As stated above apropos of Claim 4, Rosenbaum anticipates all elements of that claim. In addition, Rosenbaum discloses a sensing circuit (Fig. 1, reference 12; column 3, lines 51-57) that corresponds to the current sensor claims and provides signals representing loop current (i.e., senses drive current on the user communications line) to

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provide control signals to a controlled voltage generator (i.e., adjust drive voltage) (column 3, lines 57-63). Therefore, Rosenbaum anticipates all elements of Claim 5.

11. Claim 6 claims the access point of Claim 3 with the line driver providing a drive current controlled by the line driver drive level. As stated above apropos of Claim 3, Rosenbaum anticipates all elements of that claim. In addition, Rosenbaum discloses the switching circuit that corresponds to the line driver claimed supplying limited loop current (i.e., a drive current) (column 8, lines 45-61). Therefore, Rosenbaum anticipates all elements of Claim 6.

12. Claim 10 claims the access point of Claim 3 further comprising a communications interface interfacing a communications network with connected user communications equipment, the line driver receiving a communication signal from the communications interface and driving the user communications line in response to the communications signal. As stated above apropos of Claim 3, Rosenbaum anticipates all elements of that claim. In addition, Rosenbaum discloses a connection (i.e., interface) to a subscriber's telephone (column 8, lines 39-41) that corresponds to the user communications equipment claimed and connections (i.e., interface) to ac transmit and receive paths that correspond to communications interface claimed (column 3, lines 46-50).

13. Claim 15 claims a communications network comprising a central network; a plurality of access points connected to the central network; and a plurality of user lines connecting user equipment to the access points, the access points selectively passing communication signals between the central network and the user equipment, with at least one access points having elements comprehended by Claims 1 through 3. As stated above apropos of those claims, Rosenbaum discloses a line interface anticipating all elements of the claimed access point. In

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addition, Rosenbaum discloses the line interface that corresponds to the access point claimed used at telephone central office and, as such, inherently meeting the communications network elements of Claim 15. Therefore, Rosenbaum anticipates all elements of Claim 15.

14. Claim 16 claims the network of Claim 15 wherein the access points comprises elements comprehended by Claim 1. As stated above apropos of Claim 15, Rosenbaum anticipates all elements of that claim. In addition, as stated above apropos of Claim 1, Rosenbaum discloses a line interface anticipating all elements of the claimed access point. Therefore, Rosenbaum anticipates all elements of Claim 16.

15. Claim 17 claims the network of Claim 16 with the processing unit decreasing the line driver operating point in response to the determination indicating that the user line load is less than the operating load limits. As stated above apropos of Claim 16, Rosenbaum anticipates all elements of that claim. In addition, as stated above apropos of Claim 3, Rosenbaum discloses decreasing power (i.e., line driver operating point) for short loops (i.e., load is less). Therefore, Rosenbaum anticipates all elements of Claim 17.

16. Claim 18 claims the network of Claim 17 with the processing unit increasing the line driver operating point in response to the determination indicating that the user line load is greater than the operating load limits. As stated above apropos of Claim 17, Rosenbaum anticipates all elements of that claim. In addition, as stated above apropos of Claim 3, Rosenbaum discloses increasing power (i.e., line driver operating point) for long loops (i.e., load is greater).

Therefore, Rosenbaum anticipates all elements of Claim 18.

17. Claim 34 claims the network of Claim 18 wherein each access point provides power to connected user equipment over a user line. As stated above apropos of Claim 18, Rosenbaum

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anticipates all elements of that claim. In addition, Rosenbaum discloses supplying direct current on the telephone line (i.e., providing power to connected user equipment over a user line) (column 2, lines 5-8). Claim 34 further claims each access point monitors the load on the user line. Rosenbaum discloses providing signals representing the loop current (i.e., monitoring the user line load) (column 3, lines 51-56). Claim 34 further claims each access point dynamically adjusts power provided to the user equipment in response to the monitored line load.

Rosenbaum discloses causing a desired voltage to be supplied to the driver circuit (i.e., dynamically adjusting power) (column 8, lines 61-64). Therefore, Rosenbaum anticipates all elements of Claim 34.

18. Claim 35 is essentially similar to Claim 1 and is rejected for the reasons stated above apropos of Claim 1.

19. Claims 57 through 61 are essentially similar to Claims 1 through 5, respectively, and are rejected for the reasons stated above apropos of those claims.

20. Claim 62 claims the access point of Claim 61 with additional elements essentially similar to the elements of Claim 6. As stated above apropos of Claims 61 and 6, Rosenbaum anticipates all elements of those claims. Therefore, Rosenbaum anticipates all elements of Claim 62.

21. Claim 66 is essentially similar to Claim 10 and is rejected for reasons stated above apropos of that claim.

### ***Claim Rejections - 35 USC § 103***

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:



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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

23. Claims 7 through 9 and 63 through 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenbaum in view of Ludeman (US Patent 6,233,335).

24. Claim 7 claims the access point of Claim 6 wherein the sensing unit comprises a voltage sensor sensing a line voltage on the user communications line, the drive current being adjusted in response to the sensed line voltage. As stated above apropos of Claim 6, Rosenbaum anticipates all elements of that claim. In addition, as stated above apropos of Claim 2, Rosenbaum discloses controlling loop current (i.e., adjusting drive current). Therefore, Rosenbaum anticipates all elements of Claim 7 with the exception that Rosenbaum discloses sensing loop current instead of sensing line voltage. Ludeman discloses using voltage sensing in an adaptive SLIC (column 2, lines 40-42). It would have been obvious to one skilled in the art at the time of the invention to apply voltage sensing as taught by Ludeman to the interface taught by Rosenbaum for the purpose of using a current feed/voltage sense SLIC.

25. Claim 8 claims the access point of Claim 6 wherein the sensing unit senses a line dc voltage component, the drive current being adjusted in response to the sensed line dc voltage component. As stated above apropos of Claim 6, Rosenbaum anticipates all elements of that claim. In addition, as stated above apropos of Claim 2, Rosenbaum discloses controlling loop current (i.e., adjusting drive current). Therefore, Rosenbaum anticipates all elements of Claim 8 with the exception that Rosenbaum discloses sensing dc loop current (column 3, lines 51-56) instead of sensing dc line voltage. Ludeman discloses using voltage sensing in an adaptive SLIC (column 2, lines 40-42). It would have been obvious to one skilled in the art at the time of the

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invention to apply voltage sensing as taught by Ludeman to the interface taught by Rosenbaum for the purpose of using a current feed/voltage sense SLIC.

26. Claim 9 claims the access point of Claim 8 further comprising a current sensor. As stated above apropos of Claim 8, the combination of Rosenbaum and Ludeman makes obvious all elements of that claim. In addition, as stated above apropos of Claim 5, Rosenbaum discloses current sensing. Therefore the combination makes obvious all elements of Claim 9.

27. Claim 63 is essentially similar to Claim 7 with the additional elements of Claims 4 and 5. As stated above apropos of Claim 7, the combination of Rosenbaum and Ludeman makes obvious all elements of that claim. In addition, as stated above apropos of Claims 4 and 5, Rosenbaum anticipates all elements of those claims. Therefore the combination makes obvious all elements of Claim 63.

28. Claim 64 is essentially similar to Claim 8 with the additional limitations of Claims 4, 5 and 7. As stated above apropos of Claim 8, the combination of Rosenbaum and Ludeman makes obvious all elements of that claim. In addition, as stated above apropos of Claims 4 and 5, Rosenbaum anticipates all elements of those claims. Further, as stated above apropos of Claim 7, the combination of Rosenbaum and Ludeman makes obvious all elements of that claim. Therefore the combination makes obvious all elements of Claim 64.

29. Claim 65 is essentially similar to Claim 9 with the additional limitations of Claims 4, 5 and 7. As stated above apropos of Claim 9, the combination of Rosenbaum and Ludeman makes obvious all elements of that claim. In addition, as stated above apropos of Claims 4 and 5, Rosenbaum anticipates all elements of those claims. Further, as stated above apropos of Claim

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7, the combination of Rosenbaum and Ludeman makes obvious all elements of that claim.

Therefore the combination makes obvious all elements of Claim 65.

30. Claims 14, 19 through 22, 45 through 49 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenbaum in view of Manchester et al. (US Patent 6,574,333).

31. Claim 14 claims the access point of Claim 3 further comprising a storage unit storing at least one provisioned value, at least one default value, and the operating load limit with the processing unit initializing the operating load limit to the provisioned value or the default value. As stated above apropos of Claim 18, Rosenbaum anticipates all elements of that claim.

Therefore, Rosenbaum anticipates all elements of Claim 19 with the exception of the storage unit storing at least one provisioned value, at least one default value, and the operating load limit with the processing unit initializing the operating load limit to the provisioned value or the default value. Manchester discloses a broadband network unit common control (Fig. 2, reference 800; column 25, lines 49-50) that corresponds to the storage unit claimed and from which a line card downloads operating parameters including initial states (column 24, lines 44-46) that correspond to the default value claimed and subsequent states that correspond to the provisioned value claimed. It would have been obvious to one skilled in the art at the time of the invention to apply parameter download as taught by Manchester to the interface taught by Rosenbaum for the purpose of providing faster provisioning by configuring the interface without physical access.

32. Claim 19 claims the network of Claim 18 further comprising a storage unit with default values and provisional values, the processing unit initializing the operating load limits to one of the provisional values or the default values. As stated above apropos of Claim 18, Rosenbaum

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anticipates all elements of that claim. Therefore, Rosenbaum anticipates all elements of Claim 19 with the exception of a storage unit with default values and provisional values, the processing unit initializing the operating load limits to one of the provisional values or the default values. Manchester discloses a broadband network unit common control (Fig. 2, reference 800; column 25, lines 49-50) that corresponds to the storage unit claimed and from which a line card downloads operating parameters including initial states (column 24, lines 44-46) that correspond to the default values claimed and subsequent states that correspond to the provisioned values claimed. It would have been obvious to one skilled in the art at the time of the invention to apply parameter download as taught by Manchester to the interface taught by Rosenbaum for the purpose of providing faster provisioning by configuring the interface without physical access.

33. Claim 20 claims the network of Claim 19 with the user line driver providing a drive voltage controlled by the line driver operating point, wherein the user line driver adjusts power provided to the user equipment by adjusting the drive voltage. As stated above apropos of Claim 19, the combination of Rosenbaum and Manchester makes obvious all elements of that claim. In addition, Rosenbaum discloses providing control signals to a controlled voltage generator (i.e., adjust drive voltage) (column 3, lines 57-63) to conserve (i.e., adjust) power (column 2, lines 17-22). Therefore, the combination makes obvious all elements of Claim 20.

34. Claim 21 claims the network of Claim 20 wherein the sensing unit includes a current sensor sensing a drive current on the user line, the drive voltage being adjusted in response to the sensed drive current. As stated above apropos of Claim 20, the combination of Rosenbaum and Manchester makes obvious all elements of that claim. In addition, Rosenbaum discloses a sensing circuit (Fig. 1, reference 12; column 3, lines 51-57) that corresponds to the current sensor

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claims and provides signals representing loop current (i.e., senses drive current on the user communications line) to provide control signals to a controlled voltage generator (i.e., adjust drive voltage) (column 3, lines 57-63). Therefore, the combination makes obvious all elements of Claim 21.

35. Claim 22 claims the network of Claim 19 with the user line driver providing a drive current controlled by the line driver operating point, wherein the user line driver adjusts power provided to the user equipment by adjusting the drive current. As stated above apropos of Claim 19, the combination of Rosenbaum and Manchester makes obvious all elements of that claim. In addition, Rosenbaum discloses the switching circuit that corresponds to the line driver claimed limiting (i.e., adjusting) loop current (i.e., a drive current) (column 8, lines 45-61). Therefore, the combination makes obvious all elements of Claim 22.

36. Claim 45 claims a computer program product that implements the steps of Claim 35. As stated above apropos of Claim 35, Rosenbaum anticipates all elements of that claim. Therefore Rosenbaum anticipates all elements of Claim 45 with the exception of implementation through a computer program product. Manchester discloses a line card the functions of which are controlled by a microcontroller (Fig. 3, reference 884; column 9, lines 13-25) that inherently implements steps of a computer program product. It would have been obvious to one skilled in the art at the time of the invention to apply a computer program product implementing microcontroller as taught by Manchester to the interface taught by Rosenbaum for the purpose of providing flexible control of subscriber line interface functions.

37. Claim 46 claims the product of Claim 45 including means for increasing the line driver drive values when the measured characteristics are less than the set point values. As stated

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above apropos of Claim 45, the combination of Rosenbaum and Manchester makes obvious all elements of that claim. In addition, Rosenbaum discloses adjusting the driver circuit power (i.e., line driver drive level) to maintain an off-hook current under different loop resistance conditions by increasing power for long loops (i.e. current is less). Therefore, the combination makes obvious all elements of Claim 46.

38. Claim 47 claims the product of Claim 45 including means for decreasing the line driver drive values when the measured characteristics are greater than or equal to the set point values. As stated above apropos of Claim 45, the combination of Rosenbaum and Manchester makes obvious all elements of that claim. In addition, Rosenbaum discloses adjusting the driver circuit power (i.e., line driver drive level) to maintain an off-hook current under different loop resistance conditions by decreasing power for short loops (i.e., current is greater). Therefore, the combination makes obvious all elements of Claim 47.

39. Claim 48 claims the product of Claim 45 further comprising means for determining when power supplied to line driver is in an insufficient power state and setting the line driver drive values to predetermined minimum operating values when the determination indicates an insufficient power state. As stated above apropos of Claim 45, the combination of Rosenbaum and Manchester makes obvious all elements of that claim. In addition, Rosenbaum discloses determination of a low battery condition (Fig. 5, reference 38; column 8, lines 27-37) that corresponds to the insufficient power state claimed and generation of a fixed voltage (i.e., predetermined minimum operating value) when such a determination is made. Therefore, the combination makes obvious all elements of Claim 48.

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40. Claim 49 claims the product of Claim 45 further comprising means for storing the line driver drive values in a storage unit. As stated above apropos of Claim 45, the combination of Rosenbaum and Manchester makes obvious all elements of that claim. In addition, Manchester discloses storage of line card operating parameters (column 25, lines 49-50). Therefore, the combination makes obvious all elements of Claim 49.

41. Claim 69 is essentially similar to Claim 14 and is rejected for the reasons stated above apropos of that claim.

42. Claims 23 through 27, 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenbaum in view of Manchester and further in view of Ludeman.

43. Claim 23 claims the network of Claim 22 wherein the sensing unit includes a voltage sensor sensing a user line voltage. As stated above apropos of Claim 22, the combination of Rosenbaum and Manchester makes obvious all elements of that claim. Therefore, the combination makes obvious all elements of Claim 23 with the exception that Rosenbaum discloses sensing loop current instead of sensing line voltage. Ludeman discloses using voltage sensing in an adaptive SLIC (column 2, lines 40-42). It would have been obvious to one skilled in the art at the time of the invention to apply voltage sensing as taught by Ludeman to the combination made obvious by Rosenbaum and Manchester for the purpose of using a current feed/voltage sense SLIC.

44. Claim 24 claims the network of Claim 22 wherein the sensing unit includes a voltage sensor sensing a dc user line voltage component, the drive current being adjusted in response to the sensed dc user line voltage component. As stated above apropos of Claim 22, the

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combination of Rosenbaum and Manchester makes obvious all elements of that claim. In addition, as stated above apropos of Claim 2, Rosenbaum discloses controlling loop current (i.e., adjusting drive current). Therefore, the combination makes obvious all elements of Claim 24 with the exception that Rosenbaum discloses sensing dc loop current (column 3, lines 51-56) instead of sensing dc line voltage. Ludeman discloses using voltage sensing in an adaptive SLIC (column 2, lines 40-42). It would have been obvious to one skilled in the art at the time of the invention to apply voltage sensing as taught by Ludeman to the combination made obvious by Rosenbaum and Manchester for the purpose of using a current feed/voltage sense SLIC.

45. Claim 25 claims the network of Claim 24 further comprising a current sensor. As stated above apropos of Claim 24, the combination of Rosenbaum, Manchester and Ludeman makes obvious all elements of that claim. In addition, as stated above apropos of Claim 5, Rosenbaum discloses current sensing. Therefore the combination makes obvious all elements of Claim 25.

46. Claim 26 claims the network of Claim 24 with the processing unit decreasing the line driver operating point when the determination indicates the sensed dc user line voltage component is greater than operating voltage limits, the line driver operating point adjusting the dc user line voltage component. As stated above apropos of Claim 24, the combination of Rosenbaum, Manchester and Ludeman makes obvious all elements of that claim. In addition, Rosenbaum discloses adjusting the driver circuit power (i.e., line driver operating point) to maintain an off-hook dc current under different loop resistance conditions by decreasing power for short loops (i.e., load is less). Therefore the combination makes obvious all elements of Claim 26.



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47. Claim 27 claims the network of Claim 24 with the processing unit decreasing the line driver operating point when the determination indicates the sensed dc user line voltage component is greater than operating voltage limits, the line driver operating point adjusting the dc user line voltage component. As stated above apropos of Claim 24, the combination of Rosenbaum, Manchester and Ludeman makes obvious all elements of that claim. In addition, Rosenbaum discloses adjusting the driver circuit power (i.e., line driver operating point) to maintain an off-hook dc current under different loop resistance conditions by increasing power for long loops (i.e. load is greater). Therefore the combination makes obvious all elements of Claim 27.

48. Claim 51 claims the product of Claim 45 further comprising means for extracting a dc voltage component value from the measured voltage. As stated above apropos of Claim 45, the combination of Rosenbaum and Manchester makes obvious all elements of that claim. Therefore, the combination makes obvious all elements of Claim 51 with the exception that Rosenbaum discloses sensing dc loop current (column 3, lines 51-56) instead of sensing dc line voltage. Ludeman discloses using voltage sensing in an adaptive SLIC (column 2, lines 40-42). It would have been obvious to one skilled in the art at the time of the invention to apply voltage sensing as taught by Ludeman to the combination made obvious by Rosenbaum and Manchester for the purpose of using a current feed/voltage sense SLIC.

49. Claim 52 claims the product of Claim 51 including comparing the extracted dc voltage component value with at least one of a lower set point value and an upper set point value, and adjusting the line driver drive values responsive to the comparison. As stated above apropos of Claim 51, the combination of Rosenbaum, Manchester and Ludeman makes obvious all elements

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of that claim. In addition, Rosenbaum discloses adjusting the driver circuit power (i.e., line driver drive values) to maintain an off-hook current under different loop resistance conditions by increasing power for long loops (i.e. load is greater) and decreasing power for short loops (i.e., load is less). Therefore, the combination makes obvious all elements of Claim 52.

*Allowable Subject Matter*

50. Claims 11, 12, 13, 28 through 33, 36 through 44, 50, 53 through 56, 67 and 68 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

51. The following is a statement of reasons for the indication of allowable subject matter:

52. Claim 11 claims the access point of Claim 10 further comprising a main power supply, a backup power supply, and a power supply status signal indicating operating status of the main power supply and the backup power supply, with the line driver drive level responsive to the power supply status signal. As stated above apropos of Claim 10, Rosenbaum anticipates all elements of that claim. In addition, Ludeman discloses two power supplies (Fig. 2, reference Vbat1, Vbat2; column 2, lines 43-56) that correspond to the main and backup power supplies claimed. Further, Rosenbaum discloses determination of low battery voltage (column 8, lines 27-29) that corresponds to the power supply status signal claimed and generation of a fixed voltage (i.e., line driver drive level) responsive to the determination. However, the prior art fails to anticipate or make obvious line driver drive level responsive to an indication of the operating status of a backup power supply. Therefore, Claim 11 is allowable matter.

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53. Claims 12 and 13 are allowable matter due to dependence from Claim 11.

54. Claim 28 claims the network of Claim 24 wherein the processor compares a present sensed dc user line voltage with a previous sensed dc user line voltage, load changes being identified by the comparison and drive current being adjusted in response to an identified load change. As stated above apropos of Claim 24, the combination of Rosenbaum, Manchester and Ludeman makes obvious all elements of that claim. However, the prior art teaches comparison of measured line parameters with established thresholds and not with previous values. As such, the prior art fails to anticipate or make obvious comparing a present sensed dc user line voltage with a previous sensed dc user line voltage. Therefore, Claim 28 is allowable matter.

55. Claims 29 and 30 are allowable matter due to dependence from Claim 28.

56. Claim 31 claims elements essentially similar to allowable elements of Claim 11. As such, Claim 31 is allowable matter for reasons stated above apropos of Claim 11.

57. Claims 32 and 33 are allowable matter due to dependence from Claim 31.

58. Claim 36 claims the method of Claim 35 wherein initializing comprises determining if provisioned line driver drive values have been previously set and setting set point values to the provisioned line driver drive values if so and otherwise setting the set point values to default values defining the normal operating range. As stated above apropos of Claim 35, Rosenbaum anticipates all elements of that claim. Therefore, Rosenbaum anticipates all elements of Claim 19 with the exception of determining if provisioned line driver drive values have been previously

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set and setting set point values to the provisioned line driver drive values if so and otherwise setting the set point values to default values defining the normal operating range. Manchester discloses a broadband network unit common control (Fig. 2, reference 800; column 25, lines 49-50) that corresponds to the storage unit claimed and from which a line card downloads operating parameters including initial states (column 24, lines 44-46) that correspond to the default value claimed and subsequent states that correspond to the provisioned value claimed. However, the prior art fails to anticipate or make obvious determining if provisioned line driver drive values have been previously set. Therefore, Claim 36 is allowable matter.

59. Claim 37 claims the method of Claim 35 wherein setting further comprises checking power supply status to determine whether line driver power is in a normal power state; continuing to monitoring characteristics if line driver power supplied is determined to be in the normal power state; otherwise setting the line driver drive values to predetermined minimum operating values; and returning to setting whereby the line driver is set to a minimum power level sufficient to power one user equipment device until power supply status indicates a normal power state. As stated above apropos of Claim 35, Rosenbaum anticipates all elements of that claim. In addition, Rosenbaum discloses determination of a low battery condition (Fig. 5, reference 38; column 8, lines 27-37) that corresponds to an abnormal power state and generation of a fixed voltage (i.e., predetermined minimum operating value) when such a determination is made. However, the prior art fails to anticipate or make obvious a minimum power level sufficient to power one user equipment device. Therefore, Claim 37 is allowable matter.

60. Claims 38 through 44 are allowable matter due to dependence from Claim 37.

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61. Claim 50 claims the product of Claim 45 further comprising means for preventing the line driver drive values from being changed when a power feature variable indicates that efficient power supply operation is disabled. As stated above apropos of Claim 45, the combination of Rosenbaum and Manchester makes obvious all elements of that claim. However, the prior art fails to anticipate or make obvious means for preventing the line driver drive values from being changed when a power feature variable indicates that efficient power supply operation is disabled. Therefore, Claim 50 is allowable matter.

62. Claim 53 claims the product of Claim 52 including means for increasing the line driver drive values when the dc voltage component value is less than the lower set point value; and means for decreasing the line driver drive values when the dc voltage component value is greater than the upper set point value. As stated above apropos of Claim 52, the combination of Rosenbaum, Manchester and Ludeman makes obvious all elements of that claim. In addition, Rosenbaum discloses adjusting the driver circuit power (i.e., line driver drive values) to maintain an off-hook current under different loop resistance conditions by increasing power for long loops (i.e. load is greater) and decreasing power for short loops (i.e., load is less). However, the load conditions disclosed by Rosenbaum do not correspond to the dc voltage component values changed. As such, the prior art fails to anticipate or make obvious means for increasing the line driver drive values when the dc voltage component value is less than the lower set point value; and means for decreasing the line driver drive values when the dc voltage component value is greater than the upper set point value. Therefore, Claim 53 is allowable matter.

63. Claim 54 claims elements essentially similar to those of Claim 28. Claim 54 is allowable matter for the reasons stated above apropos of Claim 28.

64. Claims 55 and 56 are allowable matter due to dependence from Claim 54.

65. Claim 67 claims the access point of Claim 66 further comprising a power supply having a power output coupled to a power input of the line driver, the power supply having a status signal output to indicate operating status of the power supply, the power supply status signal output coupled to a third input of the comparator, with the line driver drive level operably adjusted responsive to the status signal output. As stated above apropos of Claim 66, Rosenbaum anticipates all elements of that claim. In addition, Rosenbaum discloses a central office battery (Fig. 1, reference BV; column 8, lines 14-38) that corresponds to the power supplied claimed. Rosenbaum further discloses a determination of low battery voltage that corresponds to the status signal output claimed and generation of a fixed voltage (i.e., line driver drive level operably adjusted) responsive to the determination. However, the prior art fails to anticipate or make obvious the power supply status signal output coupled to a third input of a comparator. Therefore, Claim 67 is allowable matter.

66. Claim 68 is allowable matter due to dependence from Claim 67.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Swerdlow whose telephone number is 703-305-4088. The examiner can normally be reached on Monday through Friday between 8:00 AM and 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forrester Isen can be reached on 703-305-4386. The fax phone numbers for the

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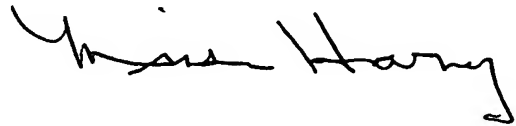
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organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

ds  
July 29, 2003

A handwritten signature in cursive script, appearing to read "Minsun Oh Harvey".

**MINSUN OH HARVEY  
PRIMARY EXAMINER**